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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/656,369	09/08/2003	Vitalii Ivanovich Silin		8252

7590 02/10/2004  
Vitalii Silin  
12415 Milestone Manor Lane  
Germantown, MD 20876

EXAMINER

YANG, NELSON C

ART UNIT PAPER NUMBER

1641

DATE MAILED: 02/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/656,369	SILIN, VITALII IVANOVICH	
	<b>Examiner</b>	<b>Art Unit</b>	
	Nelson Yang	1641	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 08 September 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Information Disclosure Statement***

1. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609 A(1) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-6 are rejected under 35 U.S.C. 102(b) as being anticipated by Wagner et al [US 6,406,921 B1].

Wagner et al teach a substrate having a surface, one or more binding molecules on the substrate surface (X), one or more instigators, comprising a compliment to one or more of said binding molecules (R) and a protein binding moiety specific for a protein (Y) (column 8, lines 10-17). Specifically, Wagner et al teach a self-assembling monolayers comprising binding molecules and instigators of the formula X-R-Y, wherein X is a functional group that binds R to

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the surface, and Y binds proteins onto the monolayer. Wagner further teaches that R may comprise a hydrocarbon chain (column 10, lines 10-13), X may be chosen as any group which affords chemisorption or physisorption of the monolayer onto the surface of the surface such as disulfides, sulfides, diselenides, selenides, thiols, isonitriles, selenol, phosphorus compounds, isothiocyanates, isocyanates, xanthanates, thiocarbamates, phosphines, amines, thio acids, or dithio acids (column 10, lines 39-46), and Y is a functional group that is either highly reactive towards a protein, or is easily converted into such an activated form (column 11, lines 15-28).

4. With respect to claims 2-3, Wagner et al teach that at least two binding molecules are adjacent to each other and at least two binding molecules are separated from each other by a border region (column 9, lines ). Specifically, Wagner et al teach arrays of biobioactive-monolayer functionalized surface patches arranged in discrete, known regions separated by surfaces free of the form X-R-V (column 9, lines 38-64), where the patches comprise a monolayer of molecules of the formula X-R-Y (column 10, lines 10-11).

5. With respect to claim 4, Wagner et al teach border regions formed from non-binding molecules that prevent nonspecific adsorption (claim 1)

6. With respect to claim 5, Wagner et al teach that the non-binding molecules are hydrophobic (claim 1). Specifically, Wagner et al teach hydrophobic monolayer formed of alkyl chains having proximal ends which are chemisorbed or physisorbed to the surface within the protein immobilization regions, and opposite hydrophobic distal ends.

7. With respect to claim 6, Wagner et al teach that the non-binding molecules are hydrophilic (claim 1). Specifically, Wagner et al teach hydrophilic monolayers comprising

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hydrophilic chains having a proximal end linked to an alkyl chain distal end, and an opposite hydrophilic distal end.

### ***Conclusion***

8. No claims are allowed.

9. The following references are also cited as art of interest: Wagner et al [US 6,329,209], Wagner et al [US 6,365,418], Pirrung et al [US 6,261,776], Chenchik et al [US 6,087,102], Maracas [US 6,048,691], Chikoti [US 6,582,926],

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nelson Yang whose telephone number is (571) 272-0826. The examiner can normally be reached on 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Long V Le can be reached on (703) 305-3399. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

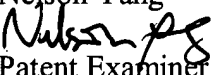
11. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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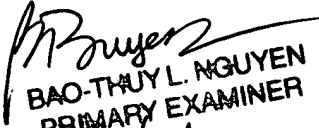
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Nelson Yang

  
Patent Examiner

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BAO-THUY L. NGUYEN  
PRIMARY EXAMINER  
2/6/04